
Identifying peer-reviewed journals in clinical medicine

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Background: Two directories that contain information about serials also offer lists of thousands of journals identified as peer-reviewed.

Librarians generally regard these lists as authoritative. **Objective:** To identify clinical medicine journals on both peer-reviewed lists, measure the extent of discrepancies between these two lists, and determine the cause for these discrepancies. **Design:** Comparison study.

Measurements: The extent of the discrepancies were tallied once the author had attempted to control for all extraneous variables. Interviews with the editorial staffs of each directory in regard to procedures for compiling the directories did not produce an explanation for these discrepancies. **Results:** Nearly half (46%) of the 784 clinical medicine journals were unique to either one directory's list of peer-reviewed journals or the other's, indicating significant discrepancies between the two directories. Specifically, *The Serials Directory* listed 211 (27%) unique titles and *Ulrich's International Periodicals Directory* listed 150 (19%) unique titles (total unique titles = 46%). Both directories listed 423 of the same titles (54%). **Conclusion:** Widespread confusion about the actual identities of peer reviewed clinical medicine journals appears to explain the discrepancies between lists in these two periodical directories.

INTRODUCTION

Stephen Lock has noted that "[f]or an activity seemingly so important for science, editorial peer review has received scant research" [1]. The limited research conducted to date suggests that definitions and practices of peer review vary significantly among those U.S. journals serving clinical medicine. Drummond Rennie observes, "We all seem to have different ideas about what peer review is, and which journals do it and how" [2]. Relman and Angell reveal the extent of this pervasive lack of agreement in the medical community:

Not only those outside the scientific establishment, but also many researchers and reviewers involved in peer review have widely different perceptions of its functions and methods. Even editors who oversee the process differ in their views of how it should work and what its purposes should be [3].

Burnham's historical research points to a surprising lack of any discernible pattern to the evolution of peer

review. He tentatively posits increased specialization and an oversupply of manuscripts as possible catalysts to its widespread endorsement [4]. More recently, justification for editorial peer review has been linked to efforts by at least one leading medical journal to capture and maintain its market share rather than to use it primarily as a quality filter method [5].

Colaizzi's research documents the degree of confusion surrounding the identity of peer-reviewed journals in clinical medicine. Colaizzi learned from the editors of journals serving four specialties that even when large percentages of the articles were peer-reviewed in their journals, anywhere from 20% to 35% of the respondents did not publish any statement to this effect. Fewer than half of the journals examined in Colaizzi's study even implied the existence of peer review. Many of the statements found were too vague for Colaizzi to determine actual practices or policies [6].

METHODS

The author initially noted unexpected discrepancies between the lists of peer-reviewed journals found in

the two major serials directories, but these discrepancies were based upon non-randomized samples of fewer than 100 titles. In this project, he sought to determine the extent of the discrepancies in a comprehensive, systematic manner. To identify relevant clinical medicine journal titles, the author personally scanned all 9,424 titles listed in the "Peer Reviewed Index" in *The Serials Directory* [7] and the more than 7,000 titles listed in the "Refereed" journals section of *Ulrich's International Periodicals Directory* [8]. Because librarians generally regard these lists as authoritative, he wanted to measure and explain these discrepancies. Journal titles were tagged for inclusion on a master list if they had obvious relevance to clinical medicine, in general, or to at least one recognized medical specialty as determined by the American Board of Medical Specialists [9]. The author employed his years of experience as a collection development librarian and his background as the journal review editor of *JAMA* to identify journals appropriate to clinical medicine. The author also compared this master list to the Brandon/Hill small medical library journals list and to the *Abridged Index Medicus* journals list to ensure that he had not overlooked core journals (he had not). Some allied health profession titles and health administration titles considered relevant to physicians naturally were incorporated into this master list.

Each journal title had to fulfill the following criteria for inclusion:

1. It had to be a viable, still published title according to the online "Locator" catalog at the National Library of Medicine.
2. At least one of the two sources consulted (*Ulrich's*, *The Serials Directory*) had to indicate that the journal was published in the United States, to increase the likelihood that the author could contact the journal's editors if necessary (National Library of Medicine records were used to resolve disputes about the nationality of the publisher).
3. The journal had to be published regularly at intervals of at least twice a year. The author linked each title generated by the methods described above that qualified for inclusion to the directory from which it originated while compiling the master list.

Exceptions to the second criterion were made in the cases of American journals published abroad, such as the *American Journal of Nephrology* which is published in Basel, Switzerland. The author excluded a number of journal entries to prevent bias. For example, the author omitted thirty-seven new journal titles that began publication in 1994 or more recently, and another forty journals that underwent title changes during the same period. The different publication cycles of *The Serials Directory* (published and distributed in April 1995) and *Ulrich's International Periodicals Directory* (published and distributed in September 1994) could have produced biased results had the author not made these

exclusions. The author also eliminated audiotape journal titles from the master list to minimize bias since this medium appears in only one of the two directories.

RESULTS

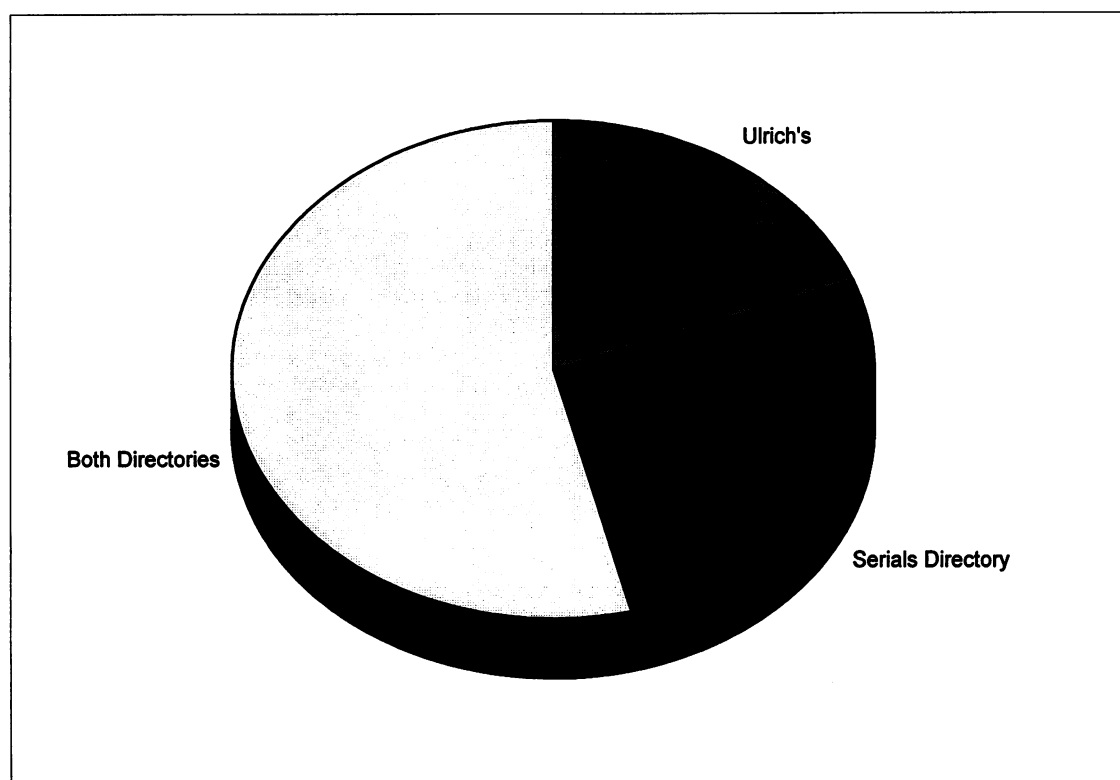
This comparative study provides empirical evidence of the serious discrepancies between the peer-reviewed title lists in these two serial directories (Figure 1). The results also tend to support previous observations about confusion surrounding the identities of peer-reviewed journals in clinical medicine. *The Serials Directory* lists 211 (27%) unique clinical medicine journals in its "Peer Reviewed Index." *Ulrich's International Periodical Directory* lists 150 (19%) unique clinical medicine journal titles in its "Refereed" journals section. Both directories list 423 (54%) of the same peer-reviewed clinical medicine journal titles. These results, coupled with the inquiries that are described below, appear to support the hypothesis; namely, that these wide discrepancies between serial sources reflect the widespread confusion about the identities of peer-reviewed journals.

One might advance an alternative hypothesis that explains these discrepancies as the consequence of incomplete coverage in the directories' overall listings of journals. *The Serials Directory* contains information on 151,000 serials in its overall list of titles and *Ulrich's* contains information on 147,000 serials. The author tested this alternative hypothesis by comparing coverage of each title appearing on his master list of peer-reviewed journals against the overall listings in each directory. The overall lists of journals in the two directories contained 98% of the same clinical medicine titles. *The Serials Directory* contained only 14 unique titles and *Ulrich's* contained only 3 unique titles from the author's master list of 784 peer-reviewed clinical medicine titles. These minor discrepancies exert only a negligible effect upon the aforementioned results.

Could the data collection methods employed by each directory lead to such disparate lists of peer-reviewed clinical medicine journal titles? This would seem to be an expected alternative explanation. Yet the author found no evidence to support this alternative hypothesis within the limited scope of his research design. Questionnaires sent by the two directories to the editor of each journal listed are nearly identical. *The Serials Directory* form asks editors, "Is your publication peer reviewed/refereed? Yes No." The *Ulrich's* form asks journal editors for verification of information to be listed in the directory about a journal. It then states: "Be sure your listing(s) is complete. The elements of a complete entry, when applicable, are . . ." followed by a short list of elements which includes "Refereed or peer-reviewed." Although both directories use nearly

Figure 1
Peer-reviewed journals: unique or overlapping listings

Sources	Number	Percentage
Ulrich's	150	19
Serials Directory	211	27
Both Directories	423	54
TOTALS:	784	100



identical wording on their questionnaires, *The Serials Directory* refers to its list as the "Peer Reviewed Index" whereas *Ulrich's* refers to its list as "Refereed." The author has attempted to control for all other possible alternative hypotheses with his research design, although further research may produce evidence to support reasonable but not yet postulated alternative hypotheses.

DISCUSSION

The author originally hypothesized that apparent discrepancies between the lists of peer-reviewed journals could be explained in terms of the relative accuracy or currency of the two directories. In this respect, the research project initially resembled Eldredge's study on the accuracy of these two directories [10]. Yet the au-

thor began to find far more compelling evidence to support the hypothesis that explains these discrepancies in terms of the confusion about the identities of these peer-reviewed journals.

This brief article primarily serves the limited purpose of reporting these surprising results. The author suggests, however, that clinical medicine journal editors should embrace a minimum standard definition of a peer-reviewed journal. The International Committee of Medical Journal Editors (ICMJE) has advanced what seems to be a reasonable standard definition:

A peer-reviewed journal is one that has submitted most of its published articles for review by experts who are not part of the editorial staff. The numbers and kinds of manuscripts sent for review, the number of reviewers, the reviewing procedures, and the use made of the reviewers' opinions may vary and therefore each journal should publicly disclose its policies in the Instructions to Authors for the benefits of readers and potential authors [11].

It seems that this definition has not necessarily reduced the confusion surrounding the identities of peer-reviewed journals since its introduction in 1992, although at least one journal has described its peer-review standards in admirable detail [12].

Two recent studies involving far smaller numbers of titles point to the range of practices among journals that label themselves as peer-reviewed. One study examines practices at sixty-seven U.S. journals and concludes that "[t]he peer review process is not uniform" [13]. Another study reveals that the editors of 221 U.S. and Canadian medical journals perceive peer review to have different purposes and vary widely in how they practice peer review [14].

Altman observed that a simple "yes/no" dichotomy for journal title identification may not suffice when he noted that "[a]s to the text of peer-reviewed journals, many sections are not always peer-reviewed" [15]. Weller has documented the variations of practices of peer review for manuscripts intended for those specific sections [16]. The author previously chaired the editorial boards of two professional journals that explicitly were *not* peer-reviewed to speed publication of articles into print. Nevertheless, several times each year a problematic manuscript presented the need for these two journals to establish an ad hoc peer-review process. As a possible alternative to the ICMJE definition, a minimum standard (e.g., at least 20% of submitted original research manuscripts will be subject to peer review) may be a more realistic standard definition for reducing much of the current confusion.

The author interviewed editorial staff at both *The Serials Directory* and *Ulrich's International Periodicals Directory* in an effort to find another explanation for the discrepancies between the lists of peer-reviewed journals. These interviews produced no substantive alter-

native explanation and instead lent support for the author's hypothesis. A clever research design for a future project with a broader scope of inquiry might be able to bypass barriers imposed by proprietary information on internal practices to explain the discrepancies between these directories as described in this report and a previous report [17]. For example, such a design might reveal that one directory obtains its information directly from the journal's editor while the other directory instead relies upon the staff at the publisher's office for information about the journal. This kind of empirical finding would further explain the discrepancies, and modify the author's primary hypothesis to include publishers' participation in the ongoing confusion about the identities of peer-reviewed medical journals.

The editor of *The Serials Directory* noted that some questionnaires are returned from journals with inquiries posed by the journal editors themselves about the definition of the term "peer-reviewed" [18]. An editor at *Ulrich's* reported that at least twice a month his office receives inquiries from directory users about how they should interpret the term "refereed." Some of these inquiries are posed by members of university tenure and promotion committees [19]. More recently, the editorial staff at *Ulrich's* drafted a preliminary statement for future inquiries about its "Refereed" list that reads: "Omission of a title from this Index does NOT mean that the journal is not peer-reviewed; nor does Ulrich's make any attempt to rate or judge the relative value of an individual journal's peer review process" [20]. This disclaimer appears to underscore the need to employ a minimum standard definition. After all, the managers of these directories are only attempting to report results accurately from their returned questionnaires. Users of these directories therefore are cautioned to be aware of the limitations of these peer-reviewed lists. Meanwhile, the findings reported in this article should have immediate practical value to those who use these serial sources.

CONCLUSION

Confusion about the identities of peer-reviewed journals in clinical medicine that has been previously observed continues to persist. Practices at journals that describe themselves as "peer-reviewed" vary widely. This confusion seems to explain discrepancies between peer-reviewed journal lists in the two directories. Interviews with editorial staff at these directories regarding their information-gathering practices failed to produce an explanation that many readers (and, initially, the author) might expect. Slightly more than half (54%) of the clinical medicine journals appeared on the peer-reviewed lists of both of the directories whereas 46% of the journals were unique to only one of the two directories. These results point to the need for a

mechanism to reduce confusion about the identities of these peer-reviewed journals, such as a minimum standard definition. Further research needs to describe and meaningfully compare peer-review practices for journals that serve clinical medicine.

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